Supplementary Material

Figure S1.

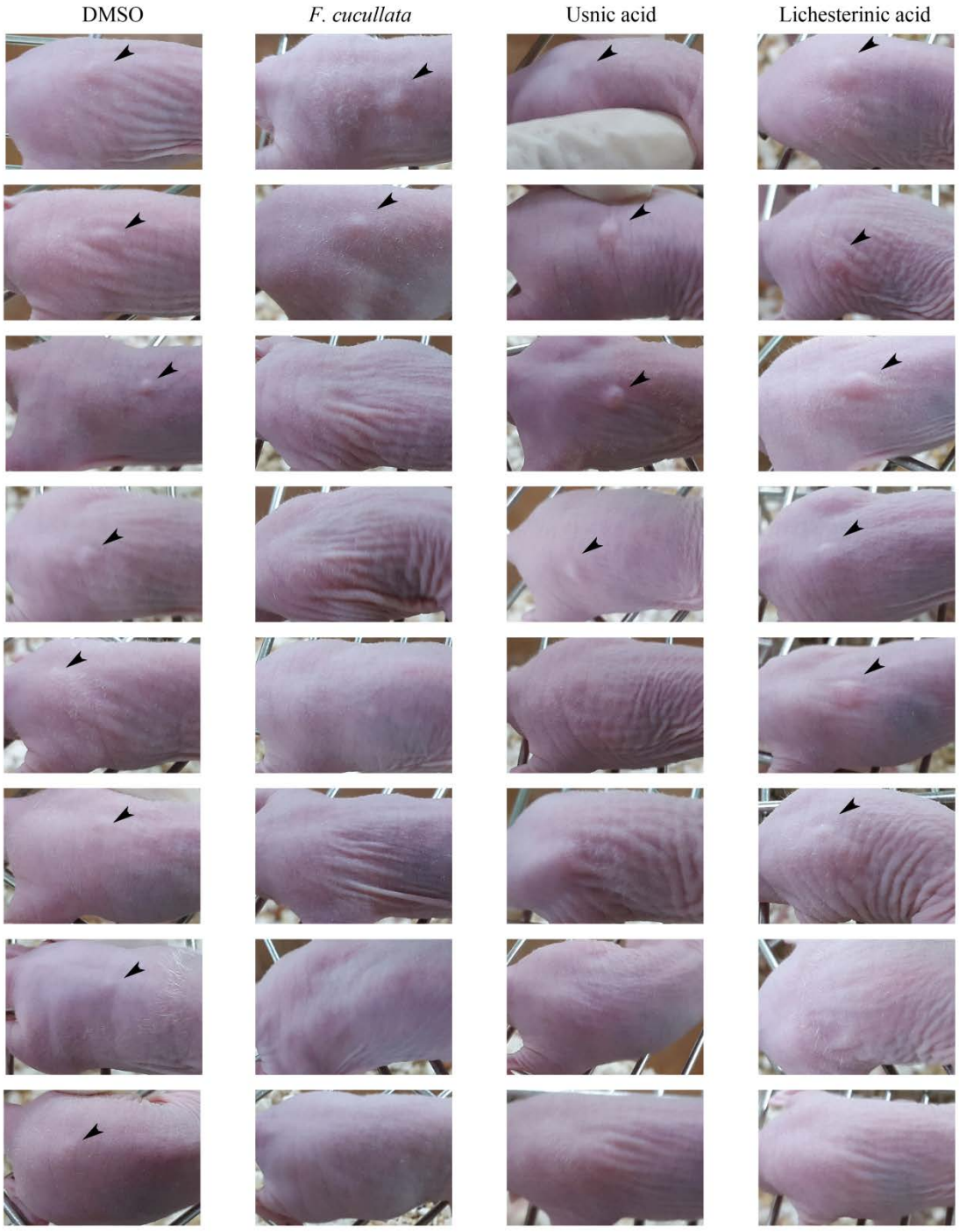

Table S1.

No. collection	Name of lichen species	Main compounds based on TLC analysis results	IC_{50} of acetone extract after 2 days (μg/ml)	
			HT29	AGS
RO11002	***Thamnolia vermicularis (SW) Schaer***	Decarboxythamnolic Thamnolic acid	71.045	87.56
RO11025	***Alectoriasa mentosa (Ach) Ach.***	Alectoronic acid Usnic acid	44.3	30.55
RO11045	***Flavocetraria nivalis (L.) Karnefelt& A. Thell***	Ergosterol Usnic acid Freidelin	39.02	17.9
RO11069	***Stereocaulon alpinum Laurer***	Norstictic acid Lobaric acid Atranorin	46.98	53.8
RO11073	***Cladonia mitis Sandst***	Fumarprotocetraric acid Norrangiformic acid Rangiformic acid Psoromic acid Usnic acid	31.63	42.7
RO11078	***Cetraria islandica (L.) Ach***	Fumarprotocetraric acid Alloprotolichesterinic acid	73.37	110.7

		Protolichesterinic acid Lichesterinic acid Freidelin		
RO11079	***Pseudevernia furfuracea (L.) Zopf***	Physodic acid Chloroatranorin Atranorin	47.14	40.3
RO11084	***Alectoria nigricans (Ach) Nyl***	Alectorialic acid	34.2	28.95
RO11111	***Bryoria capillaris (Ach.) Brodo& D. Hawksw***	Salazinic acid Psoromic acid Barbatolic acid Atranorin	91.16	41.5
RO11166	***Hypogymnia physodes (L.) Nyl***	Physodalic acid Physodic acid Atranorin Chloroatranorin	74.21	40.1
RO11176	***Usnea florida (L.) weber ex F.H. Wigg***	Salazinic acid Thamnolic acid Usnic acid Barbatic acid	53.4	65.2
RO11182	***Platismatia glauca (L.) W. Culb. & C. Culb.***	Caperatic acid Atranorin	99.537	70.7
RO11193	***Peltigera venosa (L.) Hoffm***	Tenuiorin	49.06	36.5
RO11207	***Cladonia macrophylla (Schaer.) Stenh***	Psoromic acid	N.D.	N.D.
RO11208	***Cetraria ericetorum Opiz***	Fumarprotocetraric acid	39.16	27.8

		Alloprotolichesterinic acid Protolichesterinic acid Lichesterinic acid Freidelin		
RO11209	***Evernia divaricata (L.) Ach***	Usnic acid Divaricatic acid	44.65	32.4
RO11210	***Flavocetraria cucullata (Bellardi) Karnefelt&A. Thell***	Protolichesterinic acid Usnic acid	18.924	11.6

N.D. indicates that no cytotoxicity was found on cancer cell lines at a drug concentration of 100 μg/mL.

Table S2.

Peak no.	Retention time (min)	% Intensity	Molecular formula	Compounds
1	2.268	2.30 ± 0.1	$C_{18}H_{12}O_{10}$	Salazinic acid
2	2.855	1.06 ± 0.05	$C_{19}H_{18}O_9$	Squamatic acid
3	4.646	1.1 ± 0.05	$C_{19}H_{18}O_8$	Baeomycesic acid
4	11.327	91.49 ± 0.0025	$C_{18}H_{16}O_7$	Usnic acid
5	22.315	2.27 ± 0.1	$C_{19}H_{32}O_4$	d-protolichesterinic acid
6	26.595	2.22 ± 0.1	$C_{19}H_{32}O_4$	Lichesterinic acid

Table S3.

Cell lines	MDCK	RIE	NIH 3T3	HaCaT	HEK293T	HT29	AGS	A549	CWR22Rv-1
Acetone extract (μg/ml)	124.14 ± 2.5	66.5 ± 3.75	84.7±2.5	87.9±1.8	21.82 ± 0.98	18.9 ± 0.25	11.6 ± 0.4	16.65 ± 0.35	32.2 ± 0.75
usnic acid concentration at IC_{50} in acetone extract (μM)	328.1	175.8	225.06	233.6	57.6	49.9	30.7	44.01	85.1
Usnic acid (μM)	133.04 ± 3.5	126 ± 4.25	164.2±3.7	185.7±4.8	85.3 ± 0.75	95.2 ± 0.85	15.01 ± 0.52	65.3 ± 0.65	24.1 ± 0.63
Lichesterinic acid (μM)	N.D.	N.D.	N.D.	N.D.	N.D.	587 ± 1.7	385.9 ± 1.8	N.D.	1015 ± 4.5

N.D. indicates no cytotoxicity was found on cancer cell lines at 100 μg/mL. Data are presented as means ± standard deviation of three independent experiments.

MDCK, Madin-Darby canine kidney; RIE, rat intestinal epithelial; HEK, human embryonic kidney; HT29, human colon cancer cell line; AGS, human gastric cancer cell line; A549, human lung cancer cell line; and CWR22Rv-1, human prostate cancer cell line.